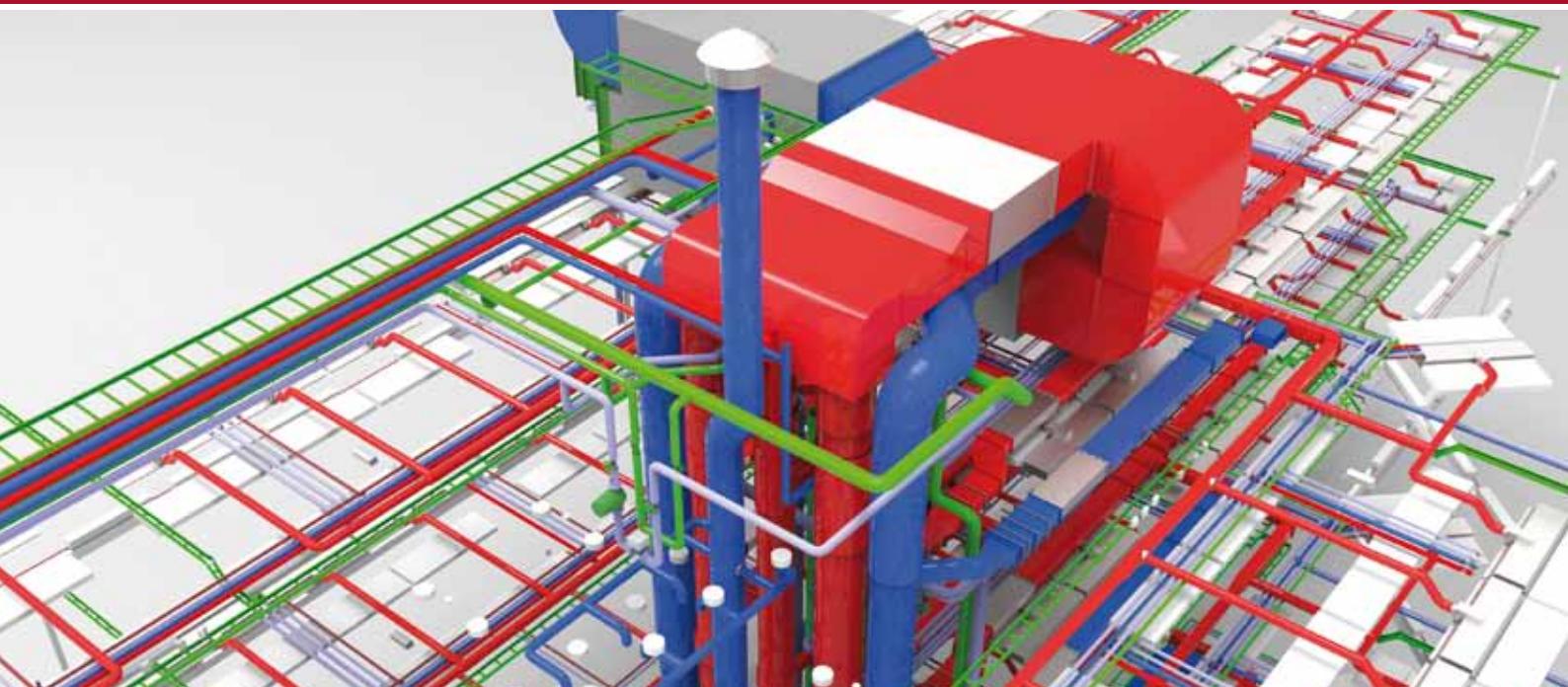


Product overview

DDS-CAD: for MEP professionals



Plan

|

Calculate

|

Simulate

|

Document



DATA DESIGN SYSTEM®

That's why DDS-CAD!

Quality

Plan, calculate, simulate and document building related mechanical, electrical and plumbing systems at the highest quality level.

Compatibility

Secure full compatibility with all popular CAD/BIM applications used by architects, structural engineers and contractors.

Independence

Use an independent, stand-alone solution; additional third party CAD programs (such as AutoCAD or Revit) are not required. Resulting in no duplicate purchases, training, update and maintenance costs.

In Control

Profit from integrated multi-disciplinary control functions such as collision detection, model validity checks, correct object connections, etc.

Support

Receive direct product and project support from the software developers without any third party intervention.

Detailed Output

Instantly produce detailed bill of quantities (BOQ) structured on a building, storey or room level. Compile plots with unlimited number of elevations, cross-sections and part models.

Future Perspective

Certified import and export for exchanging information using the ISO certified industry standard format: buildingsSMART/IFC. Providing you a software tool that is ready for the future.

Process Optimization

Software that integrates seamlessly and optimizes your workflow. We assure a smooth implementation without disruptions to your daily processes.

Save Time

Achieve an unprecedented project turn-around speed. Intelligent and automated features provide more efficiency, obtaining results faster.

BIM

Create intelligent systems within an interactive building model, using smart components and objects. Benefit directly from extensive experience of DDS as one of the pioneers in BIM development.

Intuitive Use

Work with intuitive software, assuring a quick learning curve and a minimum loss of productivity after implementation.

Integrated Calculations

Optimize your system designs by making use of integrated calculations. The intelligent building model provides the requirements and the software will assure your designs will perform accordingly.

Minimize Liability

Enhance the quality of your deliverables by making use of the integrated expertise on all levels. Avoid planning errors and minimize your liability risks.

Partnership

With the DDS team, you gain a genuine and competent partner that directly supports you with your challenges.



Dear Reader,

You meet one of the most challenging tasks in building design: the planning of building services. To do this in an economical optimal way, you need to plan plumbing, heating, ventilation, air conditioning and electrical systems within limited time, error free and at a high quality. These requirements make it essential that you have access to the most reliable and best tools.

DDS-CAD is one of those tools. Thanks to its extensive features, multi-disciplinary product concept and ability to seamlessly collaborate with other market leading software applications, DDS-CAD is able to support you at every stage in the design process.

This product and service overview provides you more detailed information about the core components of DDS-CAD and the technical features that are provided within each of the separate MEP disciplines.

However, you do not only benefit as a DDS-CAD user by the functions and diversity of our software solution. Additionally with DDS as a company, you have a direct connection to the developer of your software. This means that care and support is available directly within the DDS team, and each and every employee is there to assist you.

For us it is crucial that you know that in this partnership you are in good hands. Therefore, we offer in addition to an unprecedented product, numerous benefits that pro-

mote a fruitful partnership and long-term cooperation. As a result, you do not only get an overview of DDS-CAD, but also an indication of how DDS can become a dependable partner for you as an industry professional.

While reading this brochure you will gain a clear overview and interesting insights. We trust that the many benefits provided by DDS-CAD and the partnership with DDS will convince you in a long-term cooperation us!

Welcome to DDS!

Bjørn K. Stangeland
Chief Executive Officer DDS AS

Nils Kverneland
Managing Director DDS GmbH

More than you expect...

Good software is the basis, the perfect partnership is our goal

One of our targets as software developer is obvious: We want to provide an ideal planning tool, with which your know-how and experience can be transferred perfectly to the models and designs you create. We are convinced that you can do this with DDS-CAD.

Furthermore, we see an equally important task of ensuring you enjoy a long-lasting, successful ability to work with our software and that this is beneficial to you.

For this reason, we consider our task is far from fulfilled if we have shipped you your DDS-CAD licenses. Instead, we see this as just one of many steps on the track of a lasting and important goal, which is our partnership.



With this goal in mind, we gladly support you with:

- Extensive pre-sales consultation
- Accurate assessment of your individual needs
- Offer suitable and tailored solutions for you (and not “off the shelf” software)

When working with the software, we offer you:

- Smooth implementation support
- Thorough introduction and training
- Direct support during the first steps with DDS-CAD
- Adapting the software to meet individual requirements
- Competent support by product experts via telephone, e-mail or remote admin
- Inclusion of requirements and suggestions for further development of the software
- Tailored project support on demand
- At all times to listen to your concerns

You will see: Understanding the “partnership”, we offer clearly more than software license sales and use. Instead, it comes to things like first-class collaboration, solution development, optimization and successful advancing processes and much more. Our ambition is to offer you more than you expect.

This approach has already convinced more than 13,500 users across Europe (installers, planners, consultants, education institutions and public authorities) of the qualities of our products, and of DDS as partner.



Identify in advance the necessary improvements and updates

In line with innovations in the construction industry

To keep our customer satisfaction and the effectiveness of DDS-CAD as a planning tool at a high level, we take great care to establish exactly where enhancements are really necessary. In our opinion, the concerns and requirements of the customer are paramount in an effective working partnership. As new requirements have come to light, we have consistently provided our software with features that make your work easier.

For example: Up to 80% of the total project development cost account for changes to the original design. Moreover, we know that design errors cause significant extra costs in a project. Consequently, we have developed DDS-CAD so that design changes are as simple and error free as possible, which improves project productivity. We also aim to really amaze you with the efficiency of our software when submitting your project updates to other design partners, making the process almost effortless and without any loss of information. Re-entry of data is one of the most common causes of error, and DDS-CAD aims to reduce this to a minimum.

It is through listening to our partners, who have been asking for improved data transfer, that we have implemented the buildingSMART/IFC data exchange format as a supported standard in the software, and adopted the "BIM" (Building Information Modeling) concept at a very early stage. DDS-CAD was the first MEP application to introduce IFC support as standard, and has been a market leader in buildingSMART implementation and innovation. What this means in practice is that designing with DDS-CAD goes far beyond simple 2D CAD drafting. With DDS-CAD you develop an intelligent model of the building's MEP services, and thus the basis of a complete building simulation.



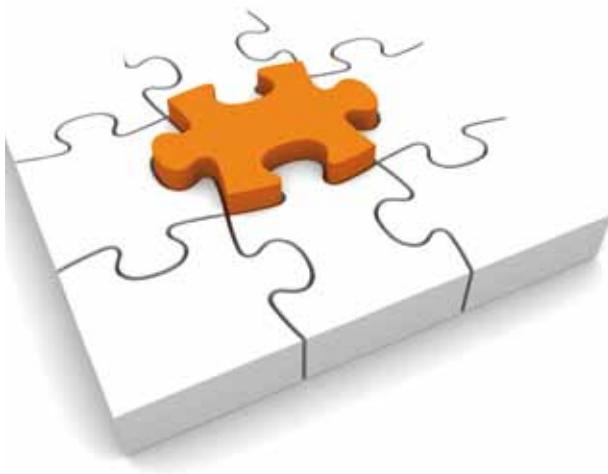
Continuous development of DDS-CAD is undertaken to keep the software up to date with new technologies and future developments in the industry. For designers in the construction industry, for example, a challenge they face is the economical transfer of existing building plans, only available in paper form, into intelligent digital models. This is particularly important, as planned renovations to the enormous existing building stock are now required, or will be in the near future. This represents a huge potential for new business for planners and designers. For this reason, DDS-CAD is already equipped with the ability to convert scanned building plans to intelligent building model files in an efficient and productive manner. On this basis, building models developed in DDS-CAD can then be used to plan the renovations of existing buildings in an efficient and cost effective manner.



These examples indicate: We are closely keeping an eye on the developments affecting the industry, and respond quickly to a foreseeable need. When this finally occurs, it is already provided by DDS-CAD.

Roll-out without interruptions: The DDS implementation

Smooth integration into your design processes, ensuring high level of approval



In our experience, an average working week of 60 hours or more is not unusual for planners and designers. The introduction of software such as DDS-CAD is always done so in order to simplify planning processes and optimize them to exploit new opportunities, ultimately saving time and therefore reducing costs.

This is how we have designed the software. But that is not enough, since experience shows that users welcome and accept new software, if the introduction and implementation of the software is successful.

In most engineering companies in which DDS-CAD is introduced, the software is replacing an existing planning program. Our consultants plan such changes carefully, ensuring there is a direct cost-benefit from the introduction of DDS-CAD. In our experience, the implementation of our software in your project work can be done in such a way that ensures that the projects will not be delayed in any way or worse still, stopped.

We support our partners step-by-step during the important integration of DDS-CAD into your existing daily processes. In this way, the transition from a traditional drafting software to the DDS-CAD BIM solution happens quickly, safely and smoothly.

In practice, we frequently take two different approaches. In many offices, a preliminary outline design is done by the engineer, which is then created by a CAD operator before calculations are made. Then the dimensions are assigned and the necessary calculations are carried out by the engineer. The results are then incorporated into the design. This approach is also used during iterative updates of the design, with both engineers and drafts-

men involved in the process. In many other offices, the work is completed, from design to installation documentation, by a planner.

Both approaches - as well as several other alternatives that are somewhere between the two described methods – are used in the market with great success. This means for us that our software must be flexible in that each of these variants are supported and can be smoothly integrated into the workflow. We meet this requirement with DDS-CAD.

Thus, the benefits of the new software for all the participating employees are quickly identified, and a high acceptance of the transition is ensured. The tangible improvements through DDS-CAD often have positive effects on motivation and commitment of the user. Working with DDS-CAD is fun from the beginning!



Ready for the future: The DDS-CAD concept

Forward vision and development independence gives us a unique advantage

Only a planning solution, which is focused on future requirements, can give you a competitive advantage and investment protection as a user.

For that reason the DDS-CAD development team has had the same target for years - not only to meet the current needs of users, but also integrate new technologies into the software. In this way, DDS-CAD users at all times have a software solution available for CAD and BIM design for buildings from a pioneer and innovation leader. This ensures that you use a tool, which is always equal to the demands of practice.

To respond quickly to new technologies and changing demands, DDS-CAD has from the beginning been conceived as a standalone solution. In this way, it has its own powerful 3D CAD core and does not rely on a third-party CAD engine as a base application. This saves costs and update overheads - with full power and flexibility. A fully integrated DXF/DWG interface provides effortless read/write access to these important traditional document formats.

An intelligent and independent DDS-CAD core is equipped with numerous features that are, in principle, available in all the programs. So whether you are an electrical engineer on a electrical module, or use it as a mechanical designer with modules for plumbing, heating, air conditioning and ventilation: the discipline specific features and functions of your software are based



on a comprehensive foundation, which alone already offers numerous benefits. In this DDS-CAD core functionality, genuine value is added.

Despite its high performance, DDS-CAD requires only minimal demands on your hardware resources. With a standard modern Windows based computer system, and a decent graphics card, you are ideally equipped for DDS-CAD.



Your benefit

Use of modern and flexible design software from only one company, no extra costs or double update overhead, simple processing of existing plans and information through appropriate interfaces (DWG/DXF, PDF and IFC). Additional expensive hardware investments are not required to use DDS-CAD.

The building model concept “Building Information Modeling” (BIM)

The world is three dimensional. We think in three dimensions. We are developing three-dimensional buildings. Therefore there is no reason why you should restrict yourself to planning construction projects in two dimensions. A two dimensional drawing is a poor representation of a 3D object and thus cannot effectively reflect reality. Consequently, DDS-CAD has been developing as up to date planning software, not based on primitive line drawings, but on a full three-dimensional 1:1 scale building model.

Both the systems to be planned, as well as the facility elements of the building, are fully three-dimensional, which allows comprehensive analysis of the project. All relevant data (such as room sizes, wall thicknesses, the details of the room elements such as windows and doors, etc...) is recorded in a “virtual room book”, and is subsequently utilized for different purposes; for example room and load calculations, BOQ creation, visualization of the building, etc... Similarly, the installed components (such as wash basins, radiators, air ducts, cable trays, or heat pumps) are modeled in 3D along with their technical characteristics (radiator performance data, ventilation duct sizing criteria for dampers and terminals) are integrated into the planning model. Even technical documents such as assembly instructions, maintenance information and repair instructions can be provided and linked directly to the components. This allows the designer to work all the time with a realistic data model of the building, including all the available background information. This forms the perfect basis for all further design stages to virtual simulation of the building.

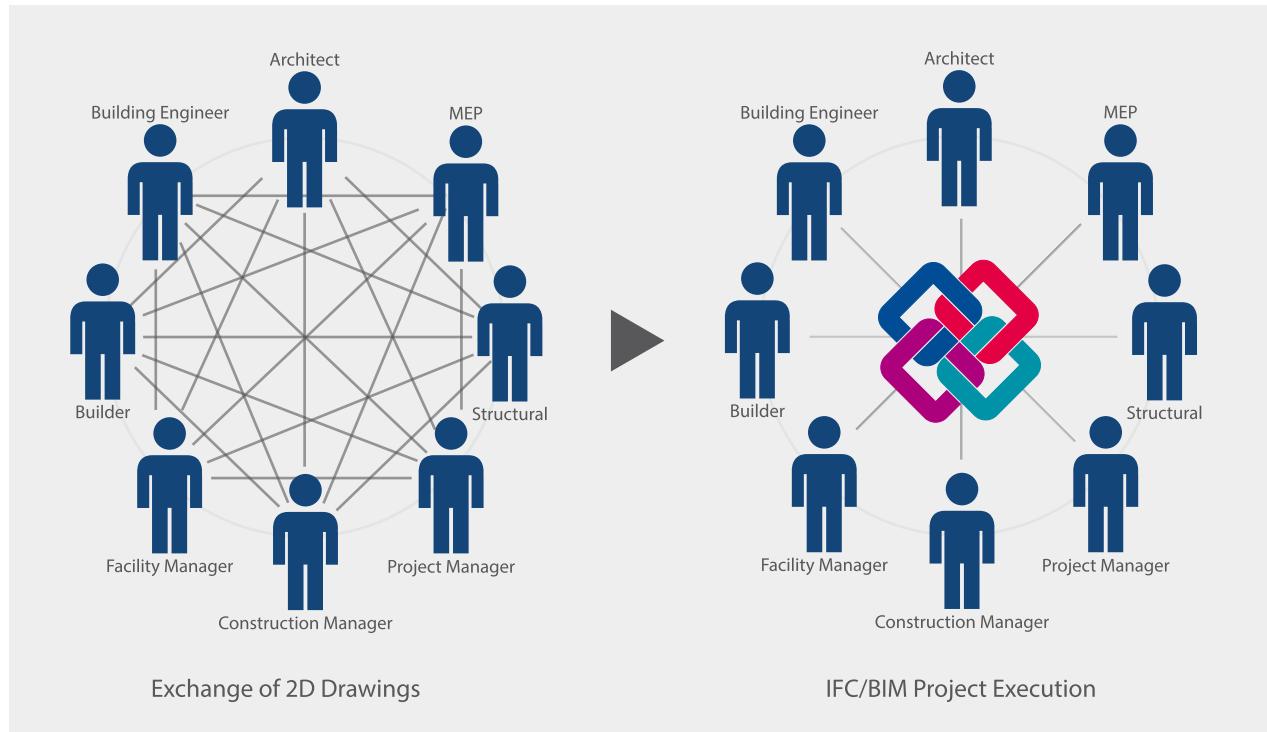
With this approach, there are numerous additional facilities for improving the quality of your proposed design - searching for possible conflicts between ventilation ducts, cable trays, and pipe routes, is an example. Numerous calculation functions, fascinating visualization options and comprehensive scheduling are other features that are made possible with the 3D model.

In cases where such tests, calculations, BOQ reports, 3D visualization and more detailed planning are not necessary, DDS-CAD can of course also be used for the production of traditional 2D drawings and documentation.

Your benefit

Realistic planning on a consistent basis; reduction of errors and many potential uses of the collected data for calculations, visualization, documentation and full building simulation.





The intelligent buildingSMART data exchange format IFC

When setting up the collaboration between specialized engineers, architects and contractors, the smooth, efficient exchange of design data plays a crucial role; particularly in planning based on a 3D building model. Once recorded or entered, to save time and avoid entry errors, design data should never be re-entered by members of the team. This is only guaranteed if the building information model retains its intelligent component data during data exchange between the design team.

With DDS-CAD, you have a tool with which data can be exchanged in the intelligent buildingSMART-IFC data exchange format. As a consequence, you will be able to import building models directly from buildingSMART certified architectural applications such as ArchiCAD, Allplan, Vectorworks Bentley, or Revit. Once imported, you can reference a precise, rich building model, as the basis for design and calculation of the mechanical, electrical and plumbing systems. When completed, the transfer of the design back to the architectural software, or to communicate to other certified programs, is as effortless as the initial import. These complimentary software solutions can then gain instant access to all of your detailed design data such as heating loads, U-values, air exchange rates, cable ratings and design specification. A mouse click is enough to get the desired information; for example, to identify the desired sewer or ventilation flow rate.

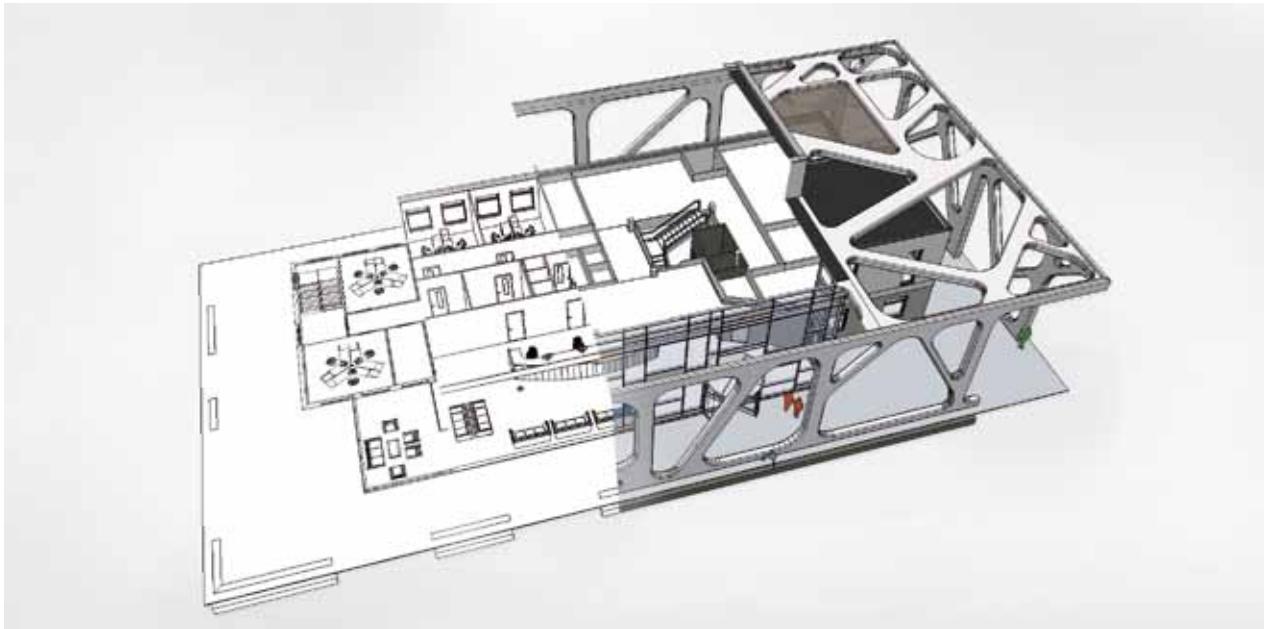
In the same manner, it is possible during the operational stage of a building, to efficiently cross-reference this design data, with appropriate software, when planning upgrades and renovations. Duplication of information, which introduces the risk of errors and misinterpretation of design intent, is therefore avoided.

As a buildingSMART-IFC 2x3 certified software product, DDS-CAD offers design professionals unprecedented quality of data exchange.



Your benefit

Significant time savings and high level of data exchange security with project partners – helps manage future risks.



The versatile floor plan and building coverage

To create your building plans in DDS-CAD you rarely need to create them from scratch. This is only necessary if there are no plans for the object you are processing - either in data or in paper form. When you are entrusted with the planning of a renovation or building modification, you will often only have access to drawings in paper form rather than digital plans. In order to utilize these paper documents for computerized planning, DDS-CAD offers the possibility to process even scanned paper drawings, in TIFF, JPG and many other formats. These scanned plans can be easily referenced and a three-dimensional building model of the project can be efficiently developed using them as a basis.

In DDS-CAD, you can always use the imported 2D plans as a basis for quick and easy 2D MEP planning.

Even without a 3D building model, it is possible to develop a 3D MEP design, as this does not depend on having a building model. This allows you access to the advanced calculation and documentation functions such as network sizing and BOM. To make full use of the building related functions, you can extend this 2D representation with a few clicks to create a realistic 3D building model.

If even paper plans are not available, you can still effortlessly and quickly create a 2D plan or 3D model, based on survey data, using DDS-CAD.

With DWG based floor plans you can easily convert the 2D floor plan files to a 3D building model. Automated, intelligent room detection, means you will develop rooms with windows, doors and room description labels quickly and easily. The computed information is used by DDS-CAD for the creation of a building model. Using this method, you can develop the basis for professional planning in 3D in a very short time.

However, if you have access to a virtual building model from an IFC certified software these alternative methods are not necessary. With the IFC model, you already have an ideal basis for your design to progress without delay. Floors, ceilings, walls, rooms are recognized by the software, as are features such as recesses, windows and doors, floor areas and volumes. Almost immediately you can start your design and run calculations in DDS-CAD.

Your benefit

Improved efficiency and higher margins, by reducing the time spent creating the basis for design; effective planning in 2D drawings or IFC based projects; leverage legacy paper documents to develop models.

Intelligence of components and integrated object recognition

All of the components used by DDS-CAD carry additional information. For example, a radiator is not just the line, text and hatch elements necessary for the representation of the symbol, but also physical dimensions, heat output, and connection ports at the selected configuration. In a DDS-CAD model there are also available all the other components of stored data intelligent planning elements. From the walls (including the wall elements) to Windows (thermal transmittance value) to switches, cables, ducts and other components, your building model holds the necessary information to make valid calculations and plans. In addition, comprehensive product databases based on generic and parametric objects are integrated in DDS-CAD. In practice, the situation may show that with DWG/DXF plans, the appropriate objects are available. To be able to fully utilize the abilities of DDS-CAD, a supplement in the form of corresponding intelligent component data is required. For this to be carried out easily and quickly, the software is equipped

with a smart object mapping function. With this function, DDS-CAD is able to detect these objects and replace them with native components complete with their technical data and associated intelligence.

Your benefit

Time-saving import and processing of supplied plans via object mapping, access to intelligent component data, and access to extensive product databases.

Your built-in safety net: DDS-CAD as a validation and documentation tool

DDS-CAD was developed as a tool to help designers and planners to carry out their tasks accurately and diligently. This is especially true when validating and checking the design: Are there any collisions detected between pipes, ducts, and other elements? Are all the components included and connected? Are the mounting heights correctly selected? DDS-CAD will answer these and other questions, including multidisciplinary collision checks, thanks to its built-in control functions. If any errors have been detected, DDS-CAD will automatically guide you to the corresponding point (storey, room, and component) in the project.

Using DDS-CAD is like having an additional, highly proficient Quality Assurance inspector on the team, which makes it easier to achieve top quality results in your designs and documentation.

When the design is complete, your customer would normally expect comprehensive documentation to be provided. Also for your own peace of mind, evidence of the quality and accuracy of your work is crucial. A design implemented in DDS-CAD, ensures that you can provi-

de your customers detailed, comprehensive evidence in either digital or paper form.

Your benefit

Additional security, simplification of process to achieve product quality, minimize your risks and liabilities.

Consistency and the multi-disciplinary concept

During the course of a project, the design engineer must fulfill numerous tasks. Initially, the architect's models or drawings must be included and a concept design has to be developed. Corrections and refinements are then made, and revised plans drawn up, presented to clients, and ultimately the project is documented. Finally, the BOQ is collated, which will form the basis for procurement.

With DDS-CAD you need just one tool for all these tasks. Thanks to the continuity of the software you will be supported from initial planning, to the delivery of a complete bill of materials to your cost estimating software. With the product databases built-in to DDS-CAD, you can benefit from being able to include full text descriptions of the materials in the BOQ at the press of a button.

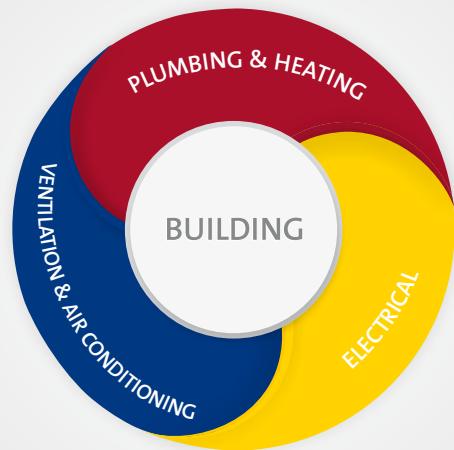
Naturally, the software also lets you pass complete project documentation to your client. This means you can enhance the value to your service, by providing future users of the building all the data they will need to transfer into specialist facility management software, something that traditionally has been a significant additional cost for the end user.

You can use this consistency of approach of DDS-CAD not only for a single discipline, but also it is possible in a multi-disciplinary planning environment. It is therefore equally comprehensive, consistent and reliable in all

areas of building services: mechanical, electrical and plumbing engineering.

Your benefit

Plan the entire project with a single tool for all disciplines; reduced software training needed; save time and effort by automatically creating parts lists and complete project documentation.



The calculation functions - integrated control

Much of your work as an MEP engineer is to execute calculations. The results represent the basis for your design layout decisions. To help you work effectively in this regard, DDS-CAD has numerous calculation functions, which are relevant for the respective disciplines. The calculation results are integrated in the project to ensure that the relevant drawings, diagrams, lists and reports are automatically updated. You can always access the latest design revisions.

The principal MEP calculation functions for mechanical, electrical and plumbing engineering are included in the respective program modules. In addition, interfacing possibilities for energy simulation and additional analyses are available.

Your benefit

Optimized use of engineering resources; swift execution of your projects.



The visualization possibilities

In project meetings, discussions with design partners, reports for your clients, marketing, and other situations, it is essential for MEP engineers to present their work professionally, in an easy to understand manner. For this purpose, the excellent visualization capabilities of DDS-CAD allow you to present your designs with clarity, and demonstrate your appreciation of a modern way of working.

In addition to the usual 2D floor plans you have for your various visualization purposes different 3D display types available. Whether as a simple 3D wire frame model, or as a colored 3D model or with semi-transparent walls, or as an overall view of the building, or as a section of the building model, or as a pure view of the planned building with no other building elements such as walls or floors - you will find the best style for your presentation. Lighting designs can be simulated perfectly to present a photorealistic image of the entire building, including the furnishings. In addition to static images, it is possible to use the advanced rendering options including the creation of an animated film, allowing the "virtual camera" to be positioned at required positions of your project. A "flight" is possible through a building such as the animated all-round view of the project. The depiction of the sun cast shadows and shading for the planning of solar energy systems can be represented in this way.

Your benefit

Winning expertise through optimal presentation options.



Integrated planning efficiency - The user friendly application concept

Software is only effective when it is easy to use, intuitive, and saves you time. You should be able to concentrate on your primary tasks as an engineer. To guarantee this, DDS has been equipped with a comprehensive CAD functionality that has been rigorously designed to be user-friendly. Despite the complex tasks carried out with the software, it remains simple to learn and easy to use. The user interface, the explorer, the multi-window viewports, and the smart and simple menu control ensure that your designs can be handled safely, logically and efficiently. You use an elegant, dynamic menu structure, and possess the ability to edit the project in parallel on different model views; the planning in DDS-CAD is efficient and comfortable from the start.

The efficient, discipline based concept of DDS-CAD leads to minimal effort, and promotes time-saving project development. This is reflected in many thoughtful details you will discover in the software.

This ease of use and time saving concept is reflected in the integrated copy functions. For example, it is possible to copy and paste an entire room's MEP installation including pipe work and all terminals and outlets, from room to room, including all the information, component data and connection intelligence. For hotels and hospitals, this feature is ideal.

Also, the multi-edit process provides efficiency gains during project planning, as any number of identical components, or components of the same group type can be edited, updated and processed simultaneously. These and other similar features and simplified editing facilities (for example of dimensions or location), ensure that you can develop your projects faster with DDS-CAD,

while maintaining the highest levels of quality.

The software has been developed with usability in mind. However, when you have any detailed usage questions, the comprehensive help system provides answers very quickly, offering step by step tutorials on completing common tasks. Also the user manual will be of great help for you in particular during the first steps with DDS-CAD. In order to offer you further assistance, we have explanatory videos available for you to view or download, in the support section of our website. As a customer with software maintenance, you will also of course be able to call or e-mail our product and support people.

Your benefit

Get started quickly; easy to learn and use; thereby gaining time and increasing efficiency in the design process.

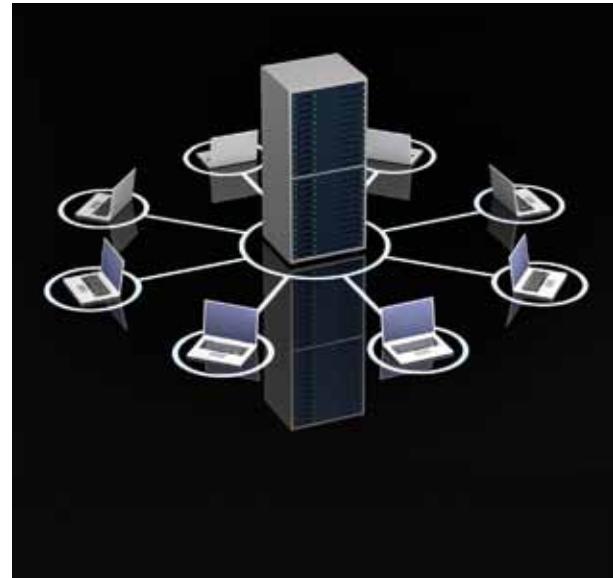
Network compatible, Collaborative multi-user approach

While the electrical engineers are working to optimize the electrical design, their mechanical colleagues are simultaneously planning the ventilation system. They are all working on separate computers linked via a network, developing a single, common project file.

This scenario is a daily reality in many planning offices which use the network version of DDS-CAD. The multi-user capability of the software allows simultaneous processing of different areas within the same project by DDS-CAD-equipped workstations on the network. In this way, accurate, fast and secure execution of the project planning is assured.

Your benefit

Optimized use of engineering resources; swift execution of your projects.



Tailored solutions based on your requirements – Modular design concept



Unlike most alternative applications, DDS-CAD is not a one-size-fits-all solution. We recognize that each company sets its own priorities, and consequently has its own very individual requirements. Why pay for something you are never going to use? That is why our software is modular, and each module can be deployed individually, or in combination with others. In this way, it is possible for you to purchase only the functionality that you actually need. Also, should your requirements change in the future, you can simply add functionality

without penalty – fair and reasonable terms.

When you want to expand your MEP planning scope, additional modules and add-ons are also available. As an example, an extension to help develop escape and rescue plans is available, as well as fully fledged energy analysis add-ons and many other specialist additional modules. You can customize and expand your DDS-CAD installation as far as you want, to match the changing requirements of your business.

Your benefit

No need to pay for unnecessary functions; add new, cost effective functionality as required; add the tools you need, to the software you already use, rather than having to implement, maintain and train on a new platform.

Key functions of the core “Building” module

Stand alone, intelligent CAD/BIM core

- Import and export of DWG, DXF and PDF files
- DWG and DXF editor with intelligent object recognition
- BIM Enhancer features for automatic creation of a building model based on DWG/DXF files
- Multi-disciplinary data exchange via IFC
- Intelligent symbol and component selection with preview dialogs
- Cross-discipline project management
- Network and multi-user project processing
- Extensive model based editing and copy functions
- Print and plot manager with variable scaling
- Structured BOQs by building, storey, room and zones
- Unlimited number of elevations, cross-sections and part models
- Comprehensive help and supporting functions
- Multi-screen capabilities
- Intelligent storey logic ensuring correct connections of components at storey transitions

Intelligent building model

- Extensive selection of intelligent and parametric components
- Insertion of automatic suspended ceilings, intelligent sky lights, dormers and PV modules
- Automatic volume and area calculations on a building, storey and room level
- Merge building storeys and disciplines for presentation, coordination and BOQs
- Integrated calculation functions: the building model forms the basis for discipline specific calculations
- Second level space boundary support for more precise simulation and analyses
- Freely definable wall layering for automatic U-value calculation

Room information

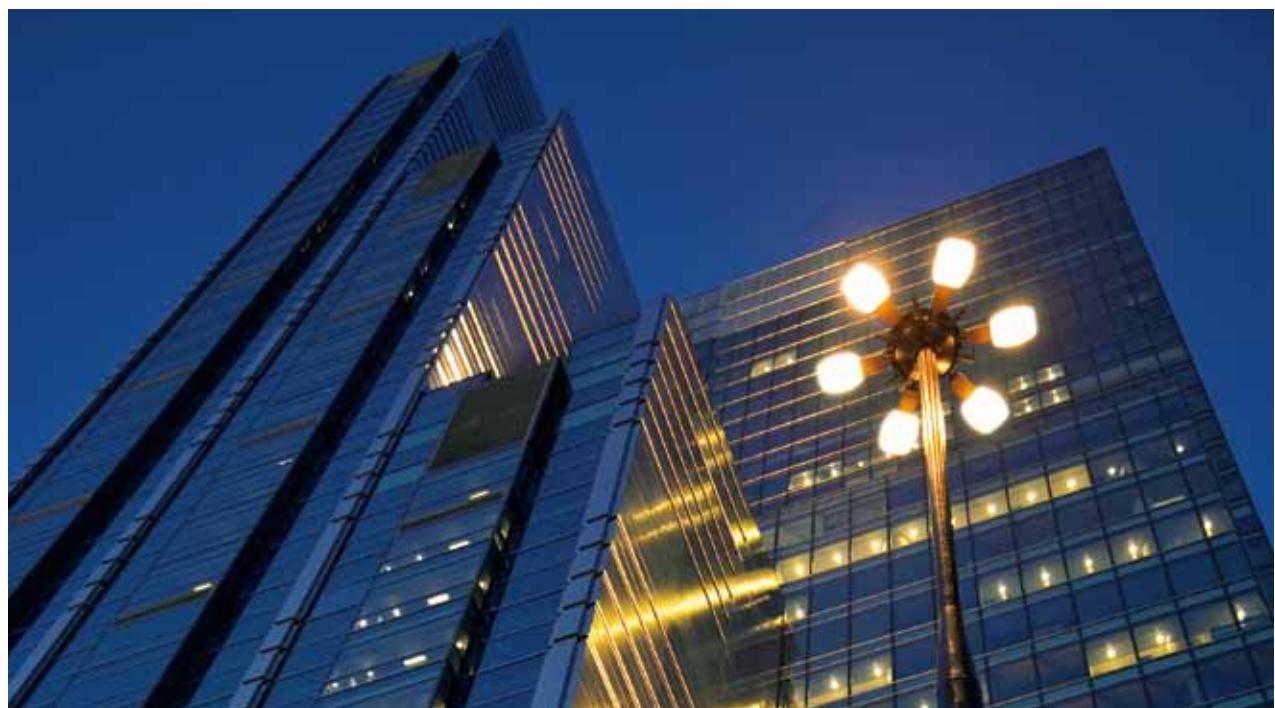
- Configurable and automatic room text
- Virtual room book and list
- Intelligent and flexible builders work and wall openings
- Automatic and dynamic building dimensioning

Coordination, documentation and presentation

- Numerous control functions such as collision detection, model validity checks, correct object connections, etc.
- Next to collision detection also real time multi-disciplinary collision prevention
- Automatic and cross-disciplines layer management
- Excellent visualization and presentation options through advanced rendering
- Intuitive model navigation with orbit, walk and fly mode options
- Unlimited number of elevations, cross-sections and part models
- Comprehensive reporting and output options
- Integrated BCF (BIM Collaboration Format) support

Available add-on modules

- Escape and rescue plans
- Advanced rendering
- PV planning



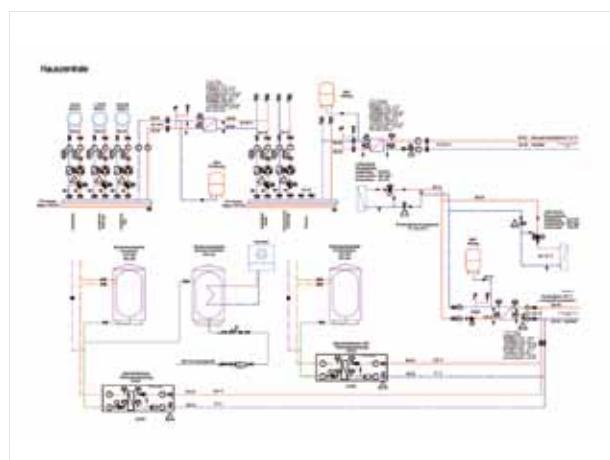
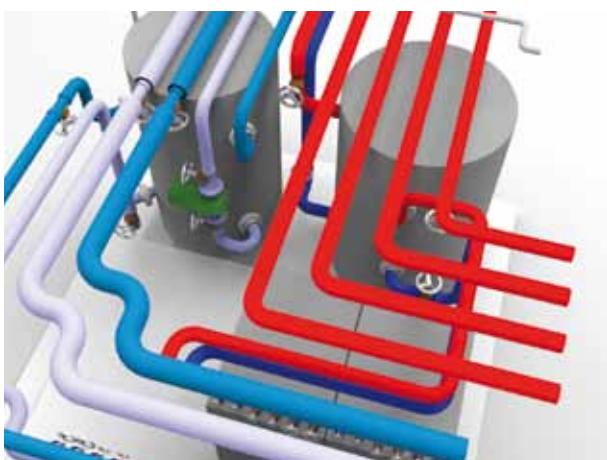
Main functions “Plumbing”

Discipline specific design functions

- Pipe system design for sanitary, heating, cooling, sprinkler, gas, etc.
- Wide range of system components such as valves, pumps, sensors, etc.
- Automatic planning of parallel pipes
- Intelligent wizard for connecting objects to pipe systems
- Integrated component data
- Freely definable and automatic fall for sewer systems
- Assignment of pipe insulation in 2D and 3D
- Installation drawings, string and system schematics
- Automatic manifold construction
- Automatic zone design for underfloor heating
- Heat pump system design (centralized and decentralized)

Discipline specific calculation and control functions

- U-value and heat load calculation according to EN 12831
- Intelligent and automatic radiator calculation and placement
- Underfloor heating calculation according to EN 1264 including adjustable volume flow
- Heating system calculation and automatic dimensioning, also according to Tichelmann
- Pressure loss calculation with hydraulic valve adjustment and valve settings
- Drinking water system calculation including circulation pipes
- Differentiated loop system calculation for drinking water systems
- Consideration of temperature drop in hot water and circulation pipes
- Sewer calculation and dimensioning according to EN 12056
- Load objects for easy simulation of existing pipe-networks in a system calculation





Main functions “Mechanical”

Discipline specific design functions

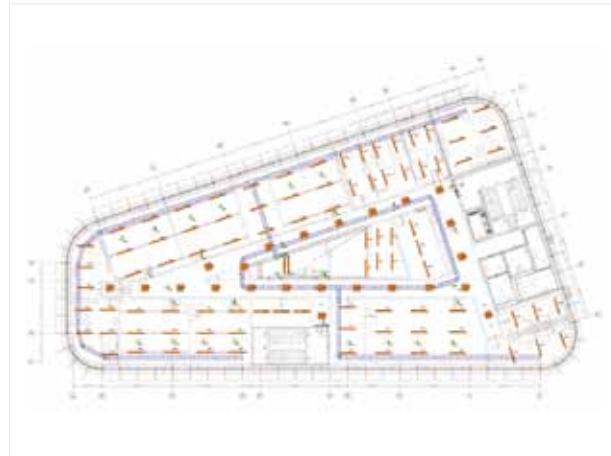
- Duct system design for supply air, extract air, etc.
- Variety of duct types (circular, oval, rectangular and also in combination)
- Design of flexible ducts
- Plan complex systems with a mixture of t-parts, collars and saddle pieces
- Parametric symbols with automatic alignment and mounting height

- Intelligent wizard for connecting components and air terminals to duct systems
- Comprehensive range of available system components and objects
- Line and system schematics with symbols according to EN12792
- For large industrial as well as controlled residential ventilation systems

Discipline specific calculation and control functions

- Automatic duct system dimensioning and pressure loss calculation
- Sound level calculation
- Air flow requirement calculation on a building, storey and room level
- Design airflow calculation wizard (number of persons, hygienic air exchange rate, etc.)
- Integrated height control and cross-discipline collision detection

- Hydraulic balancing by valves, dampers and adjustable air terminals
- Possibility to set air flow limitations per duct segment (also for specifying and locking dimensions)
- Automatic warning when exceeding maximum volume flow of air terminals
- Intelligent and storey logic control functions



Main functions “Electrical”

Discipline specific design functions

- Low voltage, PA, aerial, security, movement and presence detector system, lighting design, etc.
- EIB/KNX, telephone, video and fire alarm, nurse call and intercom systems
- Lightning protection and grounding design, foundation earthing and potential equalization

Cable support systems

- Cable trays, ladders, ducts, floor trunking and conduits
- Complete cable, wire and trunk management
- Intelligent cable trunking function with cable route optimization

Integrated discipline specific know-how

- Integrated light calculation (also bi-directional interface to Relux and DIALux)
- Intelligent circuit selection and component sizing
- Automatic cable calculation and control (e.g. for data cables)
- Control function for non-connected objects
- Cross-discipline collision detection
- Comprehensive range of available objects
- Volt drop calculation with automatic determination of worst cable segment
- Short circuit and overload calculation according to IEC 60364
- Bi-directional interface to ETS 3.0 and 4.0 for KNX programming
- Simulation of detection areas of motion and presence detectors
- Automatic verification of open cable ends

Main functions “Distributor documentation”

Discipline specific design functions

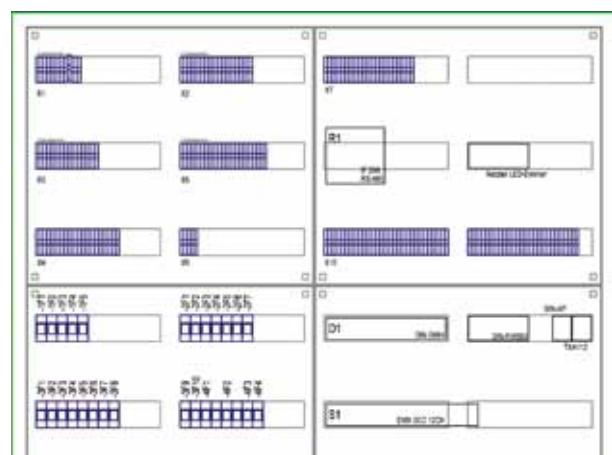
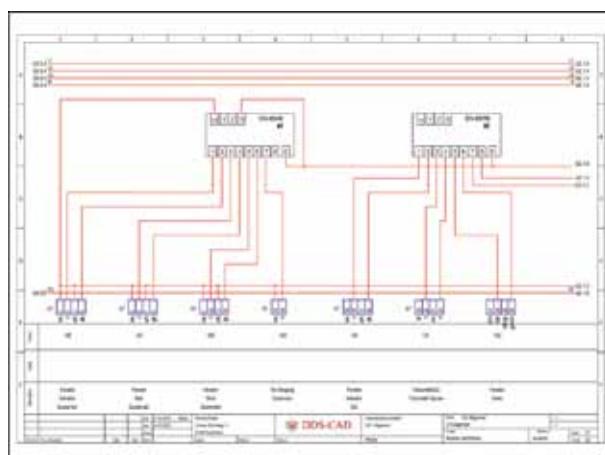
- Drawing, sheet, revision and circuit lists
- KNX layouts, circuit diagrams and line schematics
- Block diagrams and test reports
- PLC card overview
- Automatic single and multi line schematics
- Network and data documentation
- Cable connection and terminal diagrams

Distribution board

- Integrated calculation of space units for distribution boards
- Punch patterns and mimic diagrams
- Automatic generation of all views (side, interior, door and 3D view)

Integrated discipline specific know-how

- Automatic prevention of duplicate contact, components and terminals
- Automatic numbering of components and terminals
- Summation of all operating currents of the outgoing terminal to the main power supply
- Phase calculation with consideration of the diversity factors in the complete network
- Automatic control function for under sizing of components and cables



Main functions PV planning

Discipline specific design functions

- Flexible planning of roof, façade and ground mounted PV systems
- Simulation and visualization of a sun study
- Photorealistic presentation with sun animation and video
- Automatic and flexible system schematics

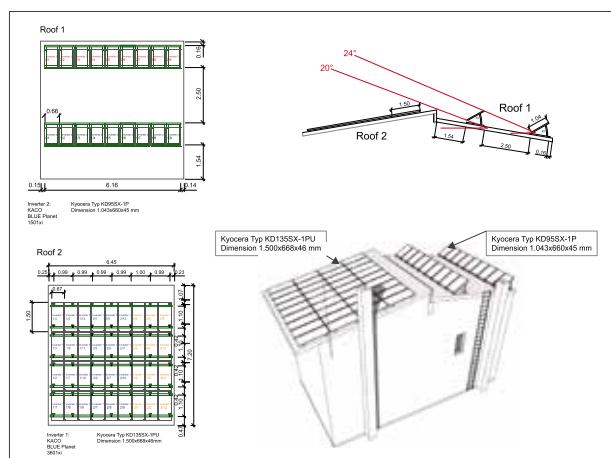
- Assembly and installation plans (including mounting systems)
- Automatic calculation of PV modules on (roof) surfaces
- Output of documentation in DWG, DXF and PDF
- Print and plot manager with variable scaling

Polysun Inside functions

- Yield calculation with dynamic simulation; taking into account module warming and reactive power
- Integrated database with global weather data
- Update of the sun's position every 4 minutes
- Consideration of horizon shading
- Extensive and up-to-date manufacturer specific product database for PV modules and inverters

- Automatic inverter assignment for PV module fields
- Automatic display of simulation results
- Consideration of self consumption based on normalized profiles

The modules for mechanical, electrical and plumbing can be combined with the PV planning and calculation functions.



Compatible and versatile with interfaces

Some of the most important interfaces of DDS-CAD:

Open BIM and IFC

With DDS-CAD you use a certified Open BIM design software without compromises. This means that the Open BIM workflow is fully supported by DDS-CAD.

gbXML

Intelligent space information can be exported from DDS-CAD in the gbXML format. This information can be imported into advanced building simulation tools for heating, cooling and energy performance.

ETS and Elvis (KNX)

The link to the intelligent building: make use of the bi-directional interface between ETS 3.0 and 4.0 to exchange information from and to DDS-CAD projects. Furthermore, the DDS-CAD model can directly be used to create visualization in Elvis.

DIALux and Relux

DDS-CAD provides an integrated light calculation according to the efficiency method. However, for more advanced calculations you can export your lighting design to DIALux and Relux for further processing and instantly import the data back into the DDS-CAD model.

Cost estimating

DDS-CAD provides a variety of export formats to common cost estimating software applications. You can exchange the BOQ from a DDS-CAD project in a pre-defined standard format so that it can be imported instantly in your cost estimating software.

VDI 3805

The VDI guideline 3805 defines the data exchange standard of technical and geometrical data between software tools for MEP planning. The interface allows you to import manufacturer specific product data with a single mouse click.

Your personal support team: DDS-CAD customer service

With practical customer support your planning problems will be reduced

A major reason for the success of DDS-CAD is undoubtedly in the quality of technical customer support; our support team enjoys an excellent reputation amongst our users. In order to maintain these high standards, we will continue to provide top quality customer support via our skilled team of professional engineers, technicians and product specialists.

Telephone / Skype support

As trained and proven professionals our support team is always able to understand your problems. The combination of technical know-how and in-depth knowledge of the software makes them ideal contacts for your questions, should you have any. Of course, support is also available via e-mail.

Project support

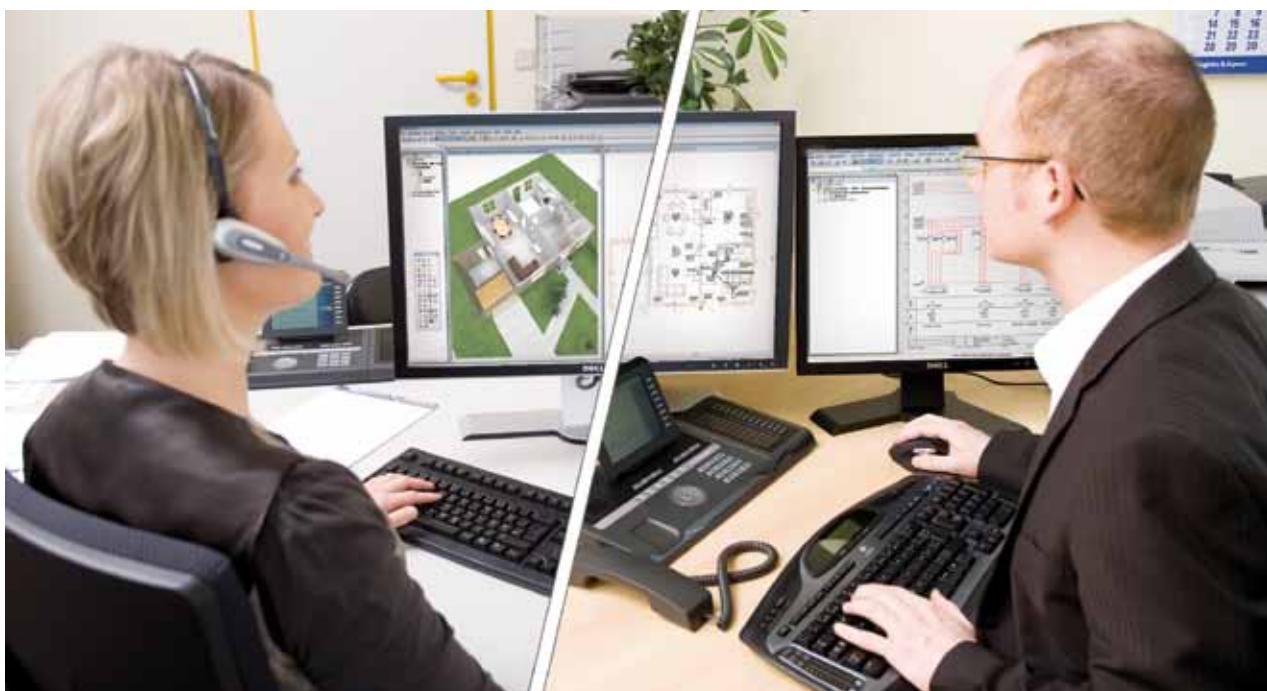
Our support team will find a solution to your challenges and can also provide - for special tasks – individual project support to assist you in managing your design process using DDS-CAD.

Online remote support

In addition to telephone and Skype support, if necessary, we can also use the proven capabilities of our online remote support. Using remote support our team has direct access to your PC and can explain to you the optimal solution for your application within your specific project environment.

Continuous development

Naturally, our support team is always open to your requests and suggestions regarding the software. Constructive criticism and suggestions from our users allow us to optimize the development of DDS-CAD. This means we are permanently developing the product at the highest possible level, from which you benefit as a user of our software solution.



Your assurance: DDS-CAD software maintenance

The DDS-CAD maintenance package enables you to keep up to date

You know how quickly software improves and new technologies are developed. With a software maintenance agreement for your DDS-CAD installation, you will be able to keep your software up to date at all times, so you can be confident that it will remain a powerful and advanced planning solution, updated to the latest specification and standards.

Software maintenance customers exclusively enjoy numerous benefits unavailable to other users.



Regular software updates

You will automatically receive any further development of DDS-CAD, supplied and delivered free of charge.

Regular documentation updates

If there are any changes or additions to the manuals and documentation, you always get the latest version.

Access to "Hotfixes"

Minor revisions or program expansions in DDS-CAD, our so-called "hotfixes", are available online. Via an Internet connection, the DDS-CAD software detects when a hotfix is available for download. Then with a few clicks, you can update your system.

Customer support

You receive quick, competent support by our highly experienced professionals; by phone, Skype, e-mail or remote support.

Discount on training

Software maintenance customers receive training at a special discounted price.

Discount on upgrades and add-ons

When acquiring additional functionality for your DDS-CAD license (upgrades) or in the purchase of additional modules or other applications (for example, escape and rescue plans), you will receive special discounts.

Maintenance of databases

The DDS-CAD database includes actual product data and is therefore subject to constant revision (for instance with new products or modified item data). As a customer with software maintenance agreement, you always get the latest version of the DDS product databases.

DDS-CAD Academy

You probably know from experience: even the best tools can lead to mediocre results, if the person who uses it, cannot utilize it in the best possible way.

Through proper training you will get the assurance that you are using your tools professionally and efficient, resulting in higher productivity and cost savings. The different training options offered by the DDS-CAD Academy are managed by professionals who all have experience in their field of work. This will guarantee you a fast, secure and above all, practical introduction.

The following training options are available:



Introduction training

- For new users who wish to familiarize themselves with the basics of DDS-CAD
- Training duration: 1 - 2 days
- Only available at our training centers
- Group training (group size as of three people)
- Exchange experience with other companies and users

Update seminars

- For users who want to familiarize themselves with the features of a new DDS-CAD version
- Training duration: 1 day
- Only at our training centers or online
- In the form of a seminar (group size from three people) or interactive webinar
- Exchange experience with other companies and users

Individual training

- For users who wish to personalize their training program
- For employees of a single company
- Specifically tailored to the needs of the participants with adapted program and duration
- If the participants are new users of DDS-CAD, the objectives and content can be aligned to an introduction training
- Available at our training centers or on-site

Online training

- For intermediate DDS-CAD users who want to advance their knowledge directly from their workplace. Also available for DDS-CAD users that are located in remote areas, or countries in which no local training facilities are available
- Individual training that is conducted over the internet
- Possibility of multiple people from the same company to attend the training session
- Specifically tailored to meet the needs of the participants
- Training duration: maximum 2 to 4 hours per day, total number of days depend on training content
- No travel cost and expenses

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